MACHINSKAYA, I. V.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

8-30-54

Reaction of aldehydes and ketones with acetic anhydride. III. Reaction of acetone and methyl propyl ketone. I. V. Machinskaya, V. A. Barkhash, and V. I. Maksimov (M. V. Lomonosov Chem. Technol. Inst., Moscow). *Zhur. Obshchei Khim.* 23, 760-9(1953); cf. *ibid.* 800; *C.A.* 48, 2011h.—Cyclopentanone (28 g.) and 102 g. Ac_2O treated with 0.20 ml. concd. H_2SO_4 and, after 5 days at room temp., with ice, extd. with Et_2O, and distn. of the ext. failed to yield a well-defined fraction, but gave material b. 72-4°, which crystd., m. 37-9° (from dil. EtOH) (putative $CH_2(CH_2).C(OAc)_2$). Lower fractions decolorized Br water and were acidic; apparently the expected enol acetate is rather unstable. Similarly 23 g. Me_2CO with 123 g. Ac_2O and 0.12 ml. H_2SO_4 after 13 days at room temp. gave a little $C_7H_{12}O_4$, b$_7$ 49.5-50°, apparently $Me_2C(OAc)_2$. MePrCO gave a very low yield of $C_7H_{12}O_4$, b. 24-6°, b. 22.5-3.5°, n_D^{20} 1.4178, d_{20} 0.9048, identified as $MeC(OAc):CHEt$, or possibly $CH_2:C(OAc)Pr$. The product gives a neutral reaction. AcPh and PhBz failed to react under the above conditions.

O. M. Kissafoff

MACHINSKAYA, I.V.; BARKHASH, V.A.

Certain properties of enolacetates. Part 1. Interaction of cyclohexanone enolacetate with N-bromosuccinimide. Zhur.ob.khim. 26 no.3:848-851 Mr '56. (MLRA 9:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Succinimide) (Acetates)

Machinskaya, I. V.

Distr: 4E4j/4E3d/4E2o(j)

V New synthesis of furan derivatives. I. V. Machinskaya and V. A. Barkhash (D. I. Mendeleev Chem. Technol. Inst., Moscow). *Khim. Nauka i Prom.* 2, 135–6 (1957). Enolacetate of cyclohexanone (I) was brominated to the 2-Br deriv. (II). II with sodioacetoacetic ester in abs. EtOH gave 74% 2-methyl-3-carbethoxy-4,5,6,7-tetrahydrocoumarone (III), hydrolyzed in alkali to 2-methyl-4,5,6,7-tetrahydrocoumarone-3-carboxylic acid. III gave bis(2,4-dinitrophenylhydrazone) of α-acetonylcyclohexanone in coned. H_2SO_4.

V. S. Mihailov

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MACHINSKAYA, I. V.

Distr: 4E4J/4E2c(J)/4E 3d

Some properties of enol acetates. II. Preparation of 2-methyl-3-carbethoxy-4,5,6,7-tetrahydrocoumarone by reaction of 3-bromo-2-acetoxy-1-cyclohexene with sodioacetoacetic ester. I. V. Machinskaya and V. A. Barkhash (D. I. Mendeleev Chem.-Technol. Inst., Moscow). *Zhur. Obshch. Khim.* 27, 1978–80 (1957); cf. *C.A.* 50, 14688c.—To 3.9 g. Na in 100 g. abs. EtOH was added 78 g. $AcCH_2CO_2Et$ followed over 1 hr. by 66 g. 2-bromo-3-cyclohexenyl acetate and after 1 hr. at 60° the mixt. yielded after the usual treatment 74% *2-methyl-3-carbethoxy-4,5,6,7-tetrahydrocoumarone*, b. 113–15°, $n^{20}D$ 1.4870, d_4^{20} 1.0842. This refluxed 3 hrs. with 10% alc. KOH and treated with CO_2 gave after aq. treatment 88% *2-methyl-4,5,6,7-tetrahydrocoumarone-3-carboxylic acid*, m. 161°. The Et ester with 2,4-dinitrophenylhydrazine in alc. H_2SO_4 with brief refluxing gave deep red bis(dinitrophenylhydrazone) of α-acetonylcyclohexanone, m. 211°, which also formed from the free carboxylic acid.

G. M. Kosolapoff

MACHINSKAYA, I.V.

Gattermann - Koch reaction. Reakts.org.soed. 7:277-306 '58. (MIRA 12:5)
(Aldehydes)

MACHINSKAYA, I.V.

Gattermann reaction. Reakts.org.soed. 7:307-365 '58.
(MIRA 12:5)
(Aldehydes) (Aromatic compounds)

AUTHORS: Machinskaya, I. V., Podberezina, A.S. SOV/79-28-6-12/63

TITLE: On the Problem of the Bromination of Cyclic Ketones by Means of Dioxanedibromide (K voprosu o bromirovanii tsiklicheskikh ketonov s pomoshch'yu dioksandibromida)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1501-1503 (USSR)

ABSTRACT: For the purpose of the synthesis of α-bromocyclohexanone the authors used the method developed by L. A. Yanovskaya a short time ago (Ref 1). According to the data of (Ref 2) a monobromocyclohexanone in a yield of 60% is obtained in the bromination of cyclohexanone with dioxanedibromide. The authors carried out this bromination by gradually adding the ketone to the dioxanedibromide dissolved in a mixture of dioxane and absolute ether; they did so because an equimolecular ratio caused decomposition phenomena of the final product. Dibromocyclohexanone was separated from the reaction mixture. Dibromocyclonexanone was earlier synthesized by Wallach (Vallakh) by action of bromine on cyclohexanone in glacial acetic acid. He ascribed to it the formula 2,6-dibromocyclohexanone-1. The melting point of this compound

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coincides with that of the dibromoketone obtained by the authors. Dibromocyclohexanone can be overdistilled without noticeable decomposition only at a pressure of 4 - 6 mm in vacuum. At 40 mm a partial decomposition occurs under the formation of lighter fractions, which decolor bromine. It is possible that the above mentioned chemist Yanovskaya took these products at 32 mm for monobromocyclohexanone. A monobromocyclohexanone could not be separated from the mixture by the authors, which fact is apparently due to its small yield. In the bromination of cyclopentanone on the same conditions the dibromide (44% yield) is obtained as main product, which hitherto has been unknown. Besides also a monobromocyclopentanone (36%) is formed which on heating with potassium acetate in acetic acid converts to α-acetocyclopentanone. There are 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva (Moscow Chemical and Technological Institute imeni D. I. Mendeleyev)

On the Problem of the Bromination of Cyclic Ketones by Means of Dioxanedibromide SOV/79-28-5-12/63

SUBMITTED: May 6, 1957

1. Ketones--Chemical reactions

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AUTHORS: Machinskaya, I. V., Barkhash, V. A. SOV/79-28-10-53/60

TITLE: On Some Properties of the Enolacetates (O nekotorykh svoystvakh enolatsetatov) III. Synthesis of the Furan- and Pyran Derivatives From Bromine-Substituted Enolacetates (III. Polucheniye proizvodnykh furana i pirana iz bromzameshchennykh enolatsetatov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2873 - 2877 (USSR)

ABSTRACT: Further to their previous study (Ref 1), the authors, in the paper under discussion, condensed the bromine-substituted enolacetates of cyclohexanone with sodio-malonic ester (replacing the sodio-acetoacetic ester used in the previous study), and obtained 2-ethoxy-3-carbethoxy-4,5,6,7-tetrahydro coumarone (65% yield). They furthermore condensed the brominated enolacetates (I), (II), and (III) of the general formula R-CHBr-CH = C($OCOCH_3$)-R' with sodio-acetoacetic ester to form 2-methyl-4-butyl-3-carbethoxy-pyran, 2,4,6-trimethyl-3-carbethoxy-pyran and 2,6-dimethyl-4-phenyl-3-carbethoxy-pyran (IV), (V), and (VI), according to

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On Some Properties of the Enolacetates. III. Synthesis of the Furan- and Pyran Derivatives From Bromine-Substituted Enolacetates SOV/79-28-10-53/66

the general pattern specified. Compounds (I), (II), and (III) were readily obtained on the reactions of N-bromo succinimide with the enolacetates of enautol, methyl-propyl ketone and benzyl acetone (38-57% yields). The heating of 2-methyl-4-butyl-3-carbethoxy-pyran with alcoholic alkali lye furnishes 2-methyl-4-butyl-3-pyrano-carboxylic acid. Under identical reaction conditions, the other two pyrans (V) and (VI) were hydrolized and decarboxylized to form 2,4,6-trimethyl-pyran and 2,6-dimethyl-4-phenyl-pyran. So far, none of the synthetized pyrans have been described in the publications. There are 6 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva (Moscow Chemotechnological Institute imeni D.I.Mendeleyev)

SUBMITTED: August 26, 1957

Card 2/2

MACHINSKAYA I. V.

PHASE I BOOK EXPLOITATION SOV/3950

Reaktsii i metody issledovaniya organicheskikh soyedineniy, kn. 9 (Reactions and Investigation Methods of Organic Compounds, Bk. 9) Moscow, Goskhimizdat, 1959. 381 p. Errata slip inserted. 4,000 copies printed.

Eds. (Title page): V.M. Rodionov, Academician (Deceased), B.A. Kazanskiy, Academician, I.L. Knunyants, Academician, M.M. Shemyakin, N.N. Mel'nikov, Professor; Eds. (Inside book): V.P. Yevdakov and V.P. Parini; Tech. Ed.: V.F. Zazul'skaya.

PURPOSE: This book is intended for industrial chemists, aspirants, teachers, and students of higher educational institutions interested in methods of synthesizing organic compounds.

COVERAGE: The collection contains 3 monographic survey articles which review some of the more interesting and important problems in the synthesis of indole derivatives and oxazolones (azlactones) and the bromination of organic compounds with N-bromosuccinimide. Figures, tables, and references accompany each article. No personalities are mentioned.

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Reactions and Investigations (Cont.) SOV/3950

AVAILABLE: Library of Congress

Card 6/6

JA/rn/lsb
8-4-60

5(3) SOV/79-29-8-76/81

AUTHORS: Machinskaya, I. V., Barkhash, V. A.

TITLE: On Some Properties of the Enolacetates. IV. A New Alkylation Method of Carbonyl Compounds

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2786 - 2792 (USSR)

ABSTRACT: In continuation of their previous work (Refs 1-3) the authors developed a method for the monoalkylation of carbonyl compounds by reaction of the bromine-substituted enolacetates easily obtained from them with organomagnesium compounds on the development of which they report in the present paper. It was shown that at the reaction of the bromine enolacetates with organomagnesium compounds with a molar ratio 1:2 apart from the substitution of alkyl for the halogen atom there is also a decomposition of the enolacetate grouping while a carbonyl group forms. At a molar ratio of 1:3 the main products forming are the corresponding tertiary alkaloids. By the reaction of the bromine enolacetate of cyclohexanone (bromine in the α-position to the initial carbonyl group) with magnesium bromo-ethyl, α-ethylcyclohexanone (at a molar ratio of 1:2) and

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1,2-diethylcyclohexanol-1 (at a molar ratio of 1:3) were formed (Scheme 1). When the bromine-substituted enolacetates of methyl propylketone, benzylacetone, and butyric acid aldehyde (bromine in the β-position to the initial carbonyl group) were caused to react with magnesium bromoethyl, at a molar ratio of 1:2, the following β-ethylation products of the initial carbonyl compounds resulted: 3-methylhexanone-5, 3-phenylhexanone-5, and 3-methylheptanal-1. At a ratio of the brominated enolacetates of methylpropylketone and butyric acid aldehyde on the one hand, and Grignard's reagent on the other of 1:3, 3,5-dimethylheptanol-3 and 3-methylheptanol-5 were obtained. The formation of an alkylated carbonyl compound from bromine enolacetate at the reaction with an organomagnesium compound (3-bromocyclohexenylacetate) may be illustrated by scheme 2. In contrast with vinyl acetate and isopropenyl acetate, which, according to Zwahlen (Ref 4) and co-workers, , undergo a regrouping during Grignard's reaction, the enolacetate of cyclohexanone react with magnesium bromoethyl like ordinary esters. The advantage of the above method is the formation of the monoalkylation products of the

On Some Properties of the Enolacetates. IV. A New Alkylation Method of Carbonyl Compounds

SOV/79-29-8-76/81

initial carbonyl compounds with a definite position of the alkyl group without any admixture of polyalkyl-substituted compounds; moreover, it can be used in fine organic synthesis. There are 23 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni D. I. Mendeleyeva (Moscow Chemtechnological Institute imeni D. I. Mendeleyev)

SUBMITTED: July 1o, 1958

Card 3/3

MACHINSKAYA, I.V.; BARKHASH, V.A.; PRUDCHENKO, A.T.

Some properties of enol acetates. Part 5: Vinylation of carbonyl compounds. Zhur.ob.khim. 30 no.7:2357-2362 Jl '60. (MIRA 13:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Vinylation) (Enols)

MACHINSKAYA, I.V.; BARKHASH, V.A.; PRUDCHENKO, A.T.

Some properties of enol acetates. Part 6: Bromo-substituted enol acetates in the Wurtz-Grignard reaction. Zhur.ob.khim. 30 no.7:2363-2366 Jl '60. (MIRA 13:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Enols)

MACHINSKAYA, I.V., kand.khimicheskikh nauk; PODBEREZINA, A.S., inzh.

Preparation of 2-hexylcyclopentanone (dihydrojasmone). Masl.-zhir. prom. 27 no.12:29-31 D '61. (MIRA 14:12)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Cyclopentanone)

MACHINSKAYA, I.V.; SMIRNOVA, G.P.; BARKHASH, V.A.

Certain properties of enol acetates. Part 7: Enol acetate of cyclobutanone and its conversion to α-alkylcyclobutanone. Zhur.ob.khim. 31 no.8:2563-2566 Ag '61. (MIRA 14:8)
(Cyclobutanone) (Enols)

BARKHASH, V.A.; SMIRNOVA, G.P.; MACHINSKAYA, I.V.

Certain properties of enol acetates. Part 8: Bromination of enol acetates with cyclopentanone and of cycloheptanone with N-bromosuccinimide. Zhur.ob.khim. 31 no.10:3197-3202 O '61. (MIRA 14:10)

(Enols) (Bromination)

MACHINSKAYA, I.V.; SMIRNOVA, G.P.; BARKHASH, V.A.

Synthesis of certain condensed systems containing a furan ring. Zhur.ob.khim. 32 no.4:1248-1252 Ap '62. (MIRA 15:4)
(Furan)

BARKHASH, V.A.; SMIRNOVA, G.P.; PRUDCHENKO, A.T.; MACHINSKAYA, I.V.

Addition of α-alkylidene groups to some cyclanones. Zhur.ob.khim. 33 no.7:2202-2208 Jl '63. (MIRA 16:8)

1. Moskovskoy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.
(Cycloalkanones)

VESELOVSKAYA, T.K.; MACHINSKAYA, I.V.; BUTYUGIN, S.M., retsenzent; VASIL'YEV, S.V., retsenzent; BELOV, V.N., prof., red. [deceased]; FEDOROVA, T.P., red.; SHVETSOV, S.V., tekhn. red.

[Problems and exercises in organic chemistry] Zadachi uprazhneniia po organicheskoi khimii. Pod red. V.N.Belova. Petrozavodsk, Rosvuzizdat, 1963. 154 p. (MIRA 16:11)
(Chemistry, Organic--Problems, exercises, etc.)

VESELOVSKAYA, T.K.; MACHINSKAYA, I.V.; NADELYAYEVA, A.K.

Certain properties of enol acetates. Part 10: Phenoxylation of ketones by the reaction of their bromo-substituted enol acetates with sodium phenolate. Zhur.ob.khim. 34 no.2:560-565 F '64. (MIRA 17:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.

BARKHASH, V.A.; SMIRNOVA, G.P.; ZUDIN, S.N.; MACHINSKAYA, I.V.

Some properties of enol-acetates Part 9: Interaction of cyclohexanone α-bromoenol-acetate with sodium. Zhur.ob.khim. 34 no.1:303-307 Ja '64. (MIRA 17:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.

BARKHASH, V.A.; SMIRNOVA, G.P.; MACHINSKAYA, I.V.

Interaction of tetrahydrofuran with acetyl chloride in the presence of zinc bromoenol acetates. Zhur. ob. khim. 33 no.8: 2570-2573 Ag '63. (MIRA 16:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

MACHINSKAYA, I.V.; BARKHASH, V.A.

Reactions of enol acetates. Reakts. i metod. issl. org. soed. 14:299-449 '64. (MIRA 18:3)

MACHINSKAYA, I.V.; VESELOVSKAYA, T.K.; KIREYEVA, V.G.

Some properties of enol acetates. Part 12: β-Phenoxylation of aldehydes by the reaction of their bromenol acetates with sodium phenolate. Zhur. org. khim. 1 no. 12:2154-2156 D '65 (MIRA 19:1)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva. Submitted November 16, 1964.

TER-GAZARYAN, E.L. [deceased]; BERLIN, A.A.; MACHINSKAYA, R.Ye.; NUBARYAN, T.K.; OGANESYAN, Sh.S.; SAMUSEVA, I.S.

Oxidation of natural gasoline in the liquid phase under pressure. Neftekhimiia 3 no.6:886-891 N-D '63. (MIRA 17:3)

1. Nauchno-issledovatel'skiy i proyektnyy institut khimii, Korovakan.

AS INSHAKH, V.I., [illegible] "[illegible] of rabbits [illegible] after [illegible] of the cortex of the cerebral [illegible] to ~~the~~ an increase in ~~of~~ rhythmic ~~activity~~ content in the inhaled air." Kazan', 1956. 13 pp (Kazan. Order of Labor Red Banner State U im. V.I. Ul'yanov-Lenina), 150 copies (KL,39-57,106)

MACHINSKAYA, V. F.

T

USSR/Human and Animal Physiology. Respiration.

Abs Jour: Ref Zhur-Biol., No 20, 1958, 93294.

Author : Sergiyevskiy, M.V., Mikhaylov, I.N., Machinskaya, V.P.
Inst : AS USSR.
Title : Characteristics of Respiration Reaction on Increased Amount of Carbon Dioxide in Inhalation of Air in Dogs and Rabbits, Normal and Deprived of Distance Receptors.

Orig Pub: V sb.: Probl. fiziol. tsentr. nervn. sistemy. M.-L., AN SSSR, 1957, 500-508.

Abstract: Experiments on normal dogs and rabbits and on dogs and rabbits which had been deprived of three pairs of distance receptors (eyes, ears, nose) revealed a decrease in motor activity, a retardation of respiration, and a lowering of sensitivity to CO_2, and also a displacement

Card : 1/2

MACHINSKIY, A. P.

"The Development of Certain Eqizottiological, Therapeutic, and Prophylactic Problems of Poultry Coccidiosis." Cand Vet Sci, Moscow Veterinary Acad, Moscow, 1954. (RZhBiol, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

MACHINSKIY, A.P., kandidat veterinarnykh nauk.

Biothermic disinfection of chicken droppings in coccidiosis.
Veterinariia 32 no.8:75-76 Ag '55. (MLRA 8:10)
(COCCIDIOSIS) (FERTILIZERS AND MANURES--DISINFECTION)

ZAGOSKIN, B.I.; MACHINSKIY, A.P., kand. veter. nauk

The connection between a technical school and agricultural production becomes stronger. Veterinariia 37 no.6:20-22 Je '60. (MIRA 16:7)

1. Zamestitel' direktora po uchebnoy chasti Ryazanskogo zootekhnichesko-veterinarnogo tekhnikuma (for Zagoskin).
(Veterinary medicine--Study and teaching)

MACHINSKIY, A.P., starshiy prepodavatel', kand. vet. nauk

Comparative effectiveness of some methods for vermifugal treatment of sheep with fascioliasis. Uch.zap.Mord.gos.un. no.42:3-7 '64.

Effect of chemicals on the oocysts of chicken coccidia. Ibid.:15-23 (MIRA 18:11)

MACHINSKIY, A.P., starshiy prepodavatel', kand. vet. nauk; SEMOV, V.N., student

Studying helminths of dogs and cats in Saransk. Uch.zap.Mord.gos.un. no.42:12-14 '64. (MIRA 18:11)

1. Mordovskiy gosudarstvennyy universitet (for Semov).

YAKUBOVICH, I.A.; ULANOV, V.I.; MACHINSKIY, A.V.

Improvement of the apparatus for continuous recording of the electric conductivity of samples during thermographic analysis. Zav. lab. 29 no.9:1141-1143 '63. (MIRA 17:1)

S/080/63/036/001/009/026
D204/D307

AUTHORS: Kaplan, G. Ye., Machinskiy, A.V., Yakubovich, I.A., Uspenskaya, T.A. and Pryanishnikova, T.V.

TITLE: The effect of superfine grinding on solid phase reactions

PERIODICAL: Zhurnal prikladnoy khimii, v. 36, no. 1, 1963, 95 - 101

TEXT: A brief review of solid phase reactions is first given, concluding that sintering processes occur as a result of mass exchange in the solid and particularly in the liquid and gaseous phases. Vibration and jet grinders are considered to be most effective. To study the sintering reactions of some ore concentrates the authors used superfine grinding to ensure a large reactive area, and further ground the fines together to ensure maximum intermixing. The grain size was of the order of 1 μ. Such treatment allows the reactions to go almost to completion at temperatures considerably below the usual temperature used for such

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processes. A few examples are quoted including the decomposition of $ZrSiO_4$ (a) in presence of mineralizers (at 1050 - 1100°C) and (b) after superfine grinding, with a mineralizer (98 - 99 % decomposition at 800 - 900°C). The effect of mineralizers are discussed and the importance of intimate mixing is underlined, quoting the decomposition of zircon in the presence of $CaCO_3/CaF_2$. Solid phase reactions of spodumene with $CaCO_3$ or CaO (reactants ground to 1 μ and mixed in a vibration grinder) took place largely at 820°C, in contrast to ~970°C when the grain size was 70 μ. The products were in a freely flowing form (grain size 0.2 - 1 mm), well suitable therefore to continuous production. Detailed study of such reactions should shed light on the complex mechanisms of solid phase processes. There are 2 figures.

SUBMITTED: September 22, 1961

YAKUBOVICH, I.A.; MACHINSKIY, A.V.; POLYAKOV, O.I.

Experiment in grinding ore in a counter current steam-jet mill.
TSvet. met. 38 no.5:12-14 My '65. (MIRA 18:6)

MACHINSKIY, F.M.

Remodeling of the "Bol'shevik" 18-block disk beet slicer.
Sakh.prom. 28 no.4:23 '54. (MLRA 7:7)

1. Yanushpol'skiy sakharnyy zavod.
(Sugar machinery)

MACHINSKIY, F.V.

Protecting shield for lathework. Sakh. prom. 32 no.8:59 Ag '58.
(MIRA 11:9)

1. Yanushpol'skiy sakhkombinat.
(Lathes--Safety appliances)

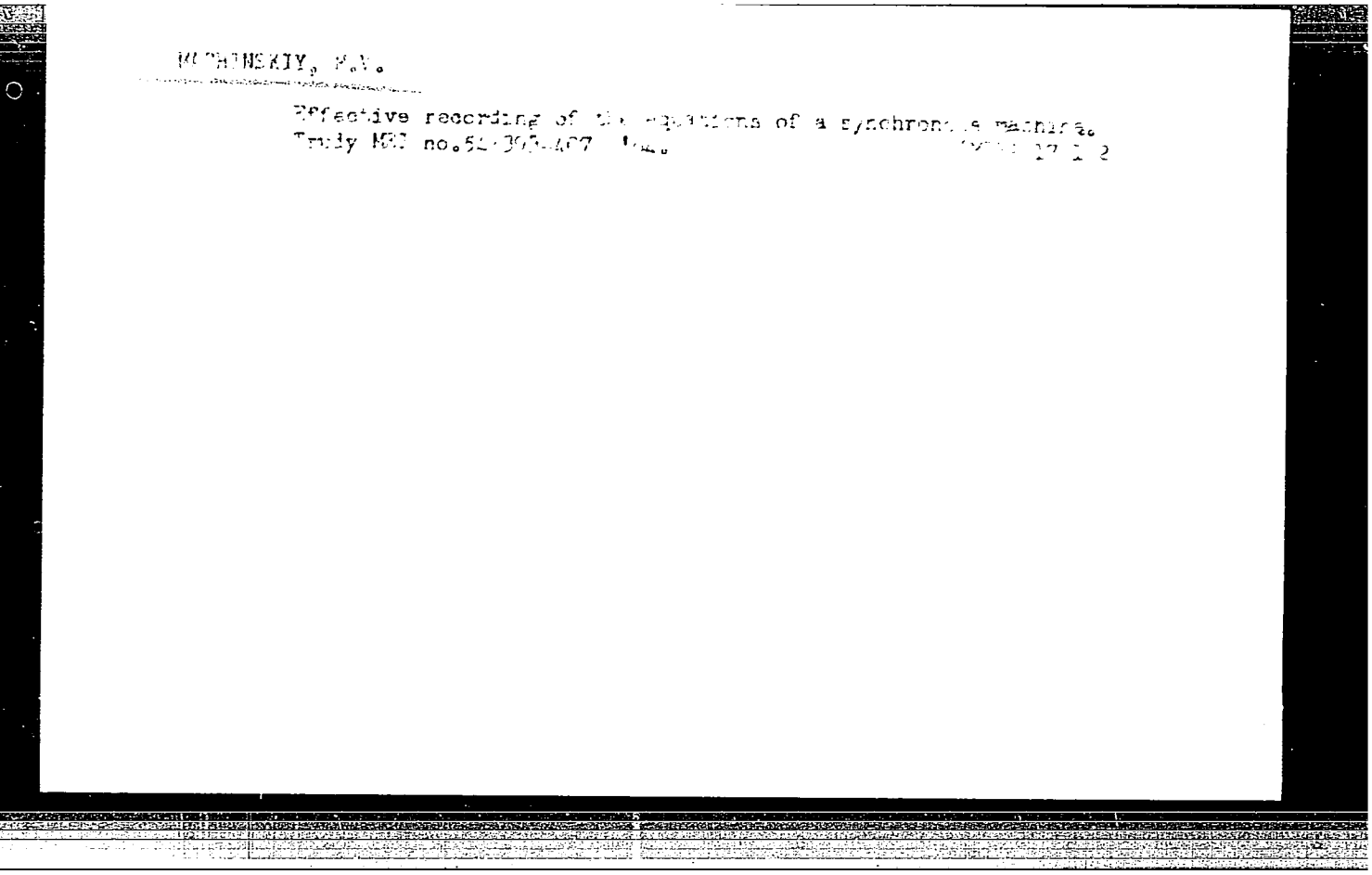
MACHINSKIY, M.V., inzh.

Equivalent circuits as a means for simplifying the study of the static stability of a multiple-unit system. Izv. vys. ucheb. zav.; energ. 6 no.6:1-6 Je '63. (MIRA 16:11)

1. Moskovskiy ordena Lenina energeticheskiy institut. Predstavleno kafedroy elektricheskikh sistem.

BRIN, I.A. (Moskva); MACHINSKIY, M.V. (Moskva)

Analysis of complex systems using a matrix method. Izv. AN SSSR. Energ. i transp. no.4:419-424 Jl-Ag '64. (MIRA 17:10)



MACHINSKIY, M.V., inzh.

Equivalent circuits of a multiple unit system with automatic control according to individual and group parameters. Izv. vys. ucheb. zav.; energ. 7 no.6:120-122 Je '64.
(MIRA 17:8)

1. Moskovskiy ordena Lenina energeticheskiy institut.

MACHINSKIY, N.D.

ASANBAURI, A.O., IOANNESYAN, R.A., KARAYEV, A.K., KACHLISHVILI, K.Z., KULIYEV, S.M., MACHINSKIY, N.D., OSTROVSKIY, A.P., SLAVSKIY, V.M., TIMOFEYEV, N.S.,

Problems of deep-drilling

Report to be submitted for the Sixth World Petroleum Congress, Frankfurt, 16-26 June 63

MACHINSKIY, O.

Train tempered young people. Voen. znan. 41 no.6:42-43 Je '65.
(MIRA 18:5)

1. Nachal'nik Upravleniya morskoy podgotovki, spasatel'noy sluzhby i sporta TSentral'nogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.

MACHINSKIY, O.

For awuatic sports on a mass scale. Voen. znan. 38 no.4:35-36 Ap '62. (MIRA 15:4)

1. Nachal'nik Upravleniya morskoy podgotovki, spasatel'noy sluzhby i sporta TSentral'nogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu.
(Aquatic sports)

MACHINSKIY, O.

Course for large groups. Voen. znan. 39 no.2:30-31 F '63.
(MIRA 16:3)

1. Nachal'nik upravleniya morskoy podgotovki, spasatel'noy sluzhby i sporta TSentral'nogo komiteta Dobrovol'nogo obshchestva armii, aviatsii i flotu SSSR.
(Lifesaving)

AUTHORS: Machinskiy, V., Shtil'man, V. SOV/107-59-1-42/51

TITLE: The Filter with the Semiconductor Triode (Fil'tr c poluprovodnikovym triodom)

PERIODICAL: Radio, 1959, Nr 1, pp 52-53 (USSR)

ABSTRACT: A filter circuit using a semiconductor triode in lieu of a choke coil is described. Two types of semiconductor triodes, namely R4 and R3V, can be used. There are 3 circuits, one graph, and one table.

Card 1/1

MACHINSKIY, V. (Kiyev); SHTIL'MAN, V. (Kiyev)

Transistorized smoothing filters. Radio no.4:41-43 Ap '65.
(MIRA 18:5)

MACHINSKIY, Prof. V. D.

Heat Engineering.

Mbr., Society for Fuel Supply, Heating, & Ventilation, -1947-c48-.

"Theoretical Considerations Regarding Criteria for Structural Thermotechnics,"

SO: Vest. Inzhenerov i Tekhnikov, No. 2, 1947;

"Basic Thermotechnical Calculations for Thawing Soils in Winter Operations,"

SO: Vest. Inzhenerov i Tekhnikov, No. 4, 1947;

"Approximate Calculation of the Rate at which Temperature Waves Die out in Enclosures in Buildings,"

SO: Vest. Inzhenerov i Tekhnikov, No. 6, 1948.

MACHINSHIY, V. D.

PA 24T43

USSR/Engineering
Soils, Frozen
Mathematics - Applied

Apr 1947

"Basic Thermo-technical Calculations for the Thawing of Soil for Winter Operations," V. D. Machinskiy, Prof, 4 pp

"Vest Inzher i Tekh" No 4

Mathematical formulae for calculating the amount of heat necessary to prepare frozen soil during winter and make it workable. The process is of necessity a rather complicated one since it is related to the condition and composition of the soil. Great emphasis is placed on the thermal conductivity of the soil, which results in the equation $a = \frac{\lambda}{\gamma c}$ where

24T43

USSR/Engineering (Contd) Apr 1947

c is the thermal capacity of the soil, λ the thermal conductivity and γ the weight of one cubic meter of soil.

24T43

MACHINSKIY, V.D., professor.

Fundamental regulations on new specifications for heat engineering calculations related to walls of industrial buildings. Stroi. prom. 25 no.10:18-20 O '47. (MLRA 9:4)

1.TSentral'nyy nauchno-issledovatel'skiy institut promyshlennykh sooruzheniy.

(Heating) (Walls)

USSR/Engineering Nov/Dec 48
Heating, Industrial
Buildings

"Approximate Calculation of the Rate at Which Temperature Waves Die Out in Enclosures in Buildings," Prof V. D. Machinskiy, Mem, Soc of Heat Supply, Heating and Ventilation, 5½ pp

"Vest Inzhener i Tekhnik" No 6

Treats under: (1) transmission of outside air temperature waves to the external surface of the wall, (2) extension of waves within the wall and on its inside surface, (3) case of a multilayer

32/49T40

PA 32/49T40

USSR/Engineering (Contd) Nov/Dec 48

wall, (4) inside surface oscillation phases lagging behind external surface oscillations, and (5) examples of using method in practice.

32/49T40

MACHINSKIY, V. D. PROF

VEKSLER, Grigoriy Solomonovich, kand. tekhn. nauk; MACHINSKIY, Vladimir Kondrat'yevich [Machyns'kyi, V.K.], inzh.; SHTIL'MAN, Viktor Il'ich, inzh.; GERASIMOV, S.M. [Herasymov, S.M.], prof., retsenzent

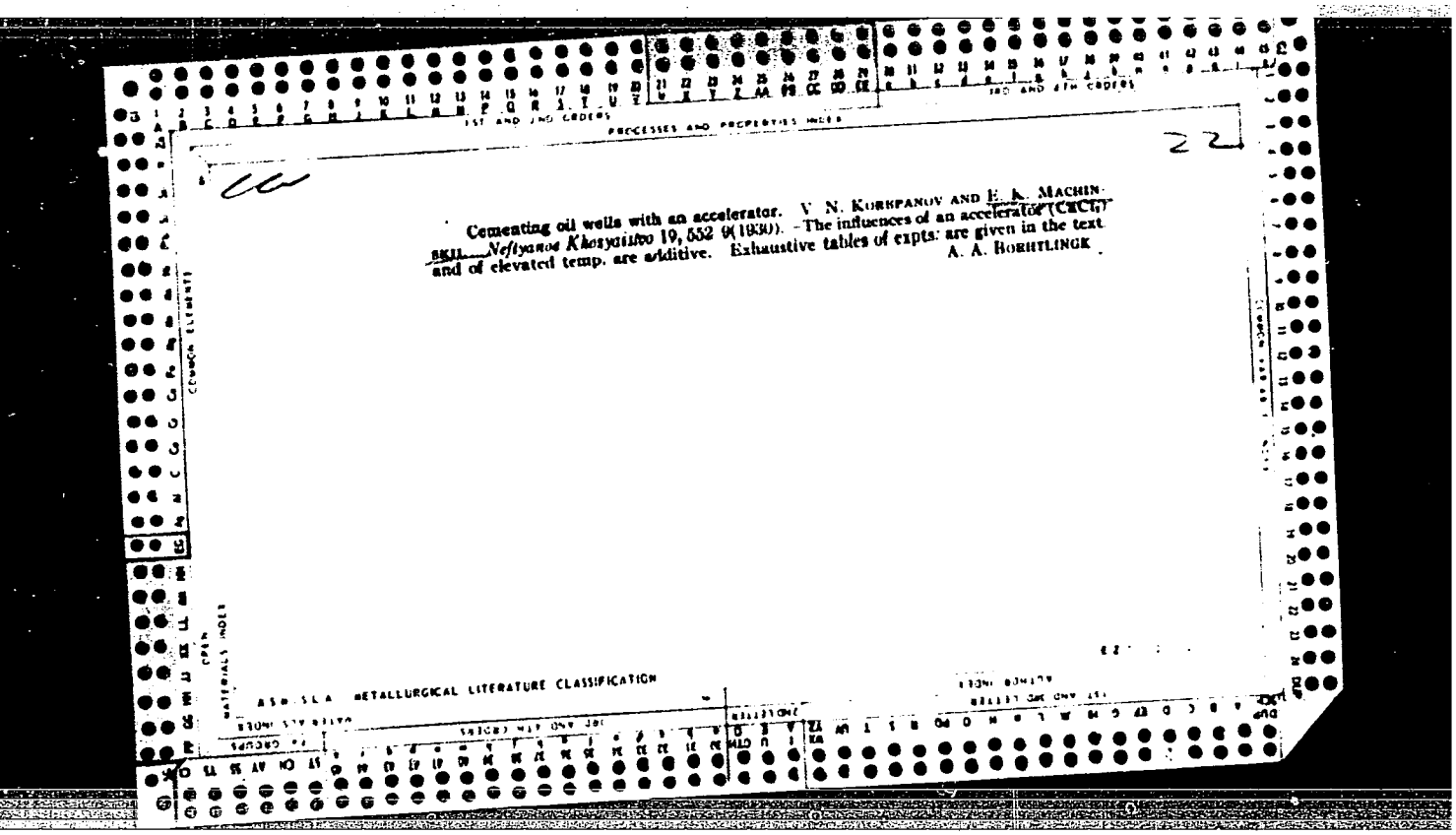
[Transistorized smoothing filters] Tranzystorni zhladzhuiuchi fil'try. Kyiv, Tekhnika, 1964. 170 p. (MIRA 18:4)

ASTAKHOV, N. P., Eng., MACHINSKIY, V. N., Eng.

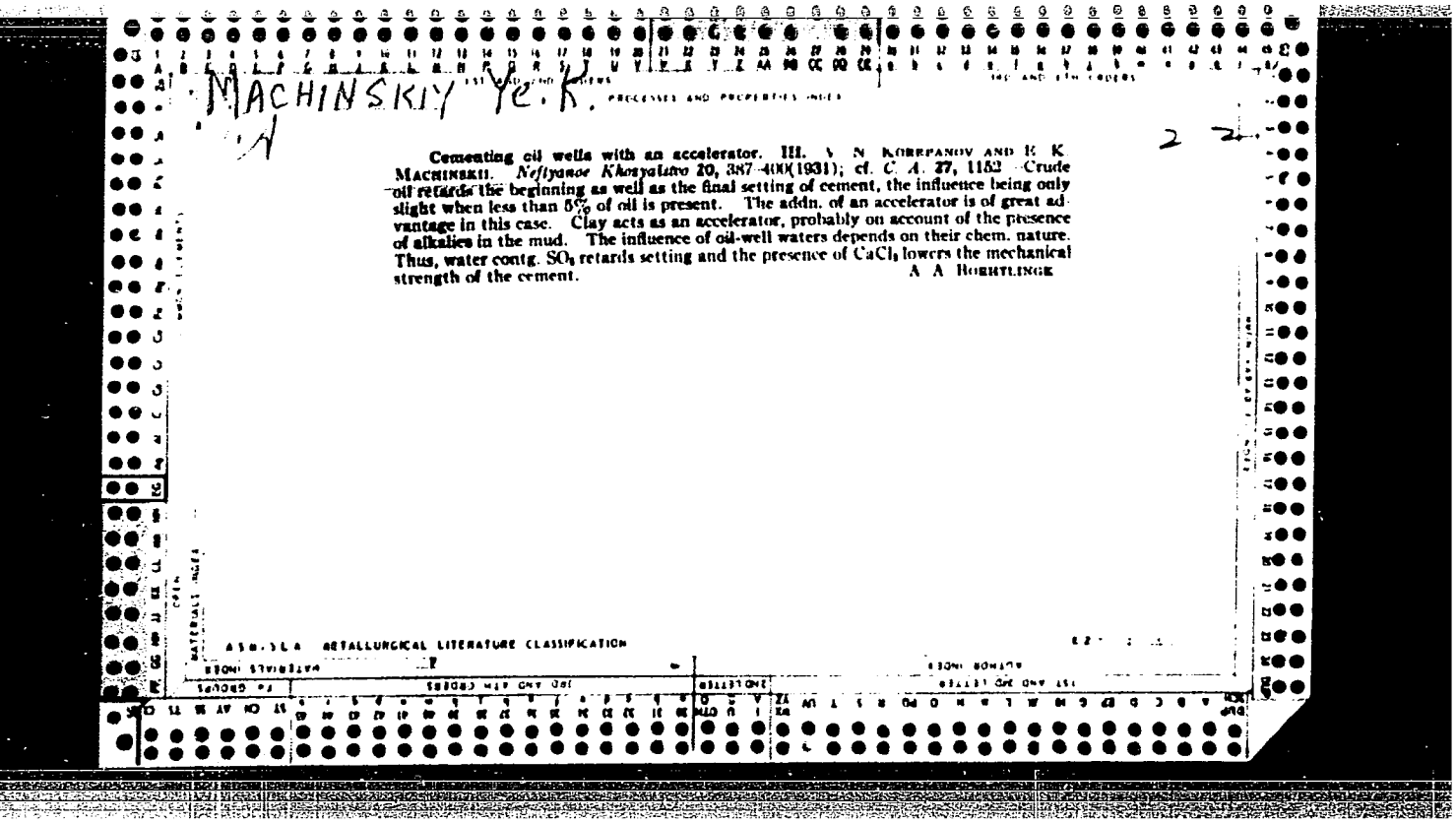
Electric Lines - Poles

Protecting wooden supports of an electric transmission line from rotting. Rab. energ. 2 no. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952, UNCLASSIFIED.



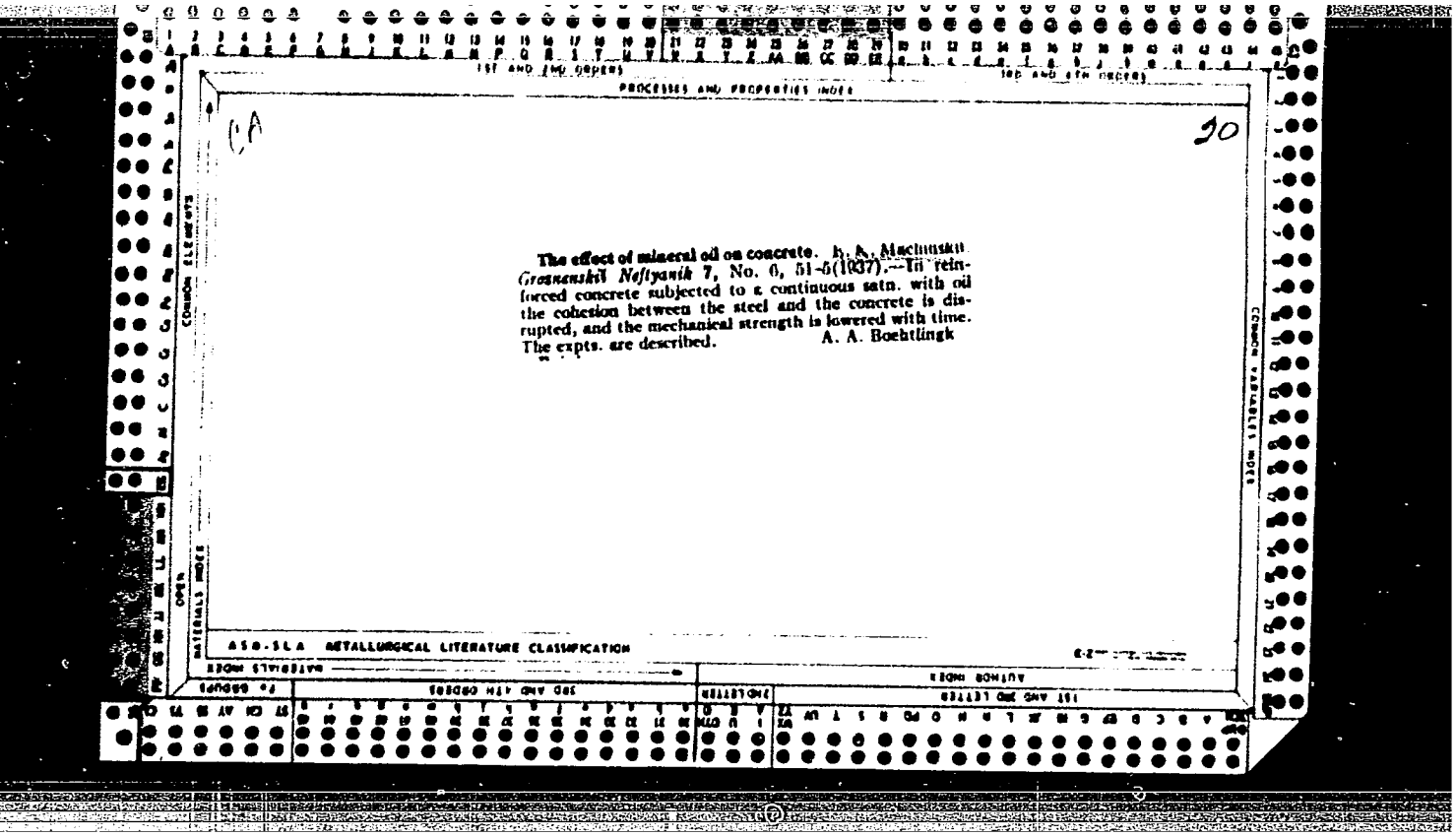
Cementing oil wells with an accelerator. V. N. KORNPANOV AND E. A. MACHIN. *Neftyanoe Khozyaistvo* 19, 552-9(1930). —The influences of an accelerator ($CaCl_2$) and of elevated temp. are additive. Exhaustive tables of expts. are given in the text.
A. A. BOEHTLINGK



MACHINSKIY Ye. K.

Cementing oil wells with an accelerator. III. V. N. KORRPANOV AND K. K. MACHINSKII. *Neftyanoe Khozyaistvo* 20, 387-400(1931); cf. *C. A.* 27, 1152. Crude oil retards the beginning as well as the final setting of cement, the influence being only slight when less than 5% of oil is present. The addn. of an accelerator is of great advantage in this case. Clay acts as an accelerator, probably on account of the presence of alkalies in the mud. The influence of oil-well waters depends on their chem. nature. Thus, water contg. SO_3 retards setting and the presence of $CaCl_2$ lowers the mechanical strength of the cement.

A. A. BOBETSKII



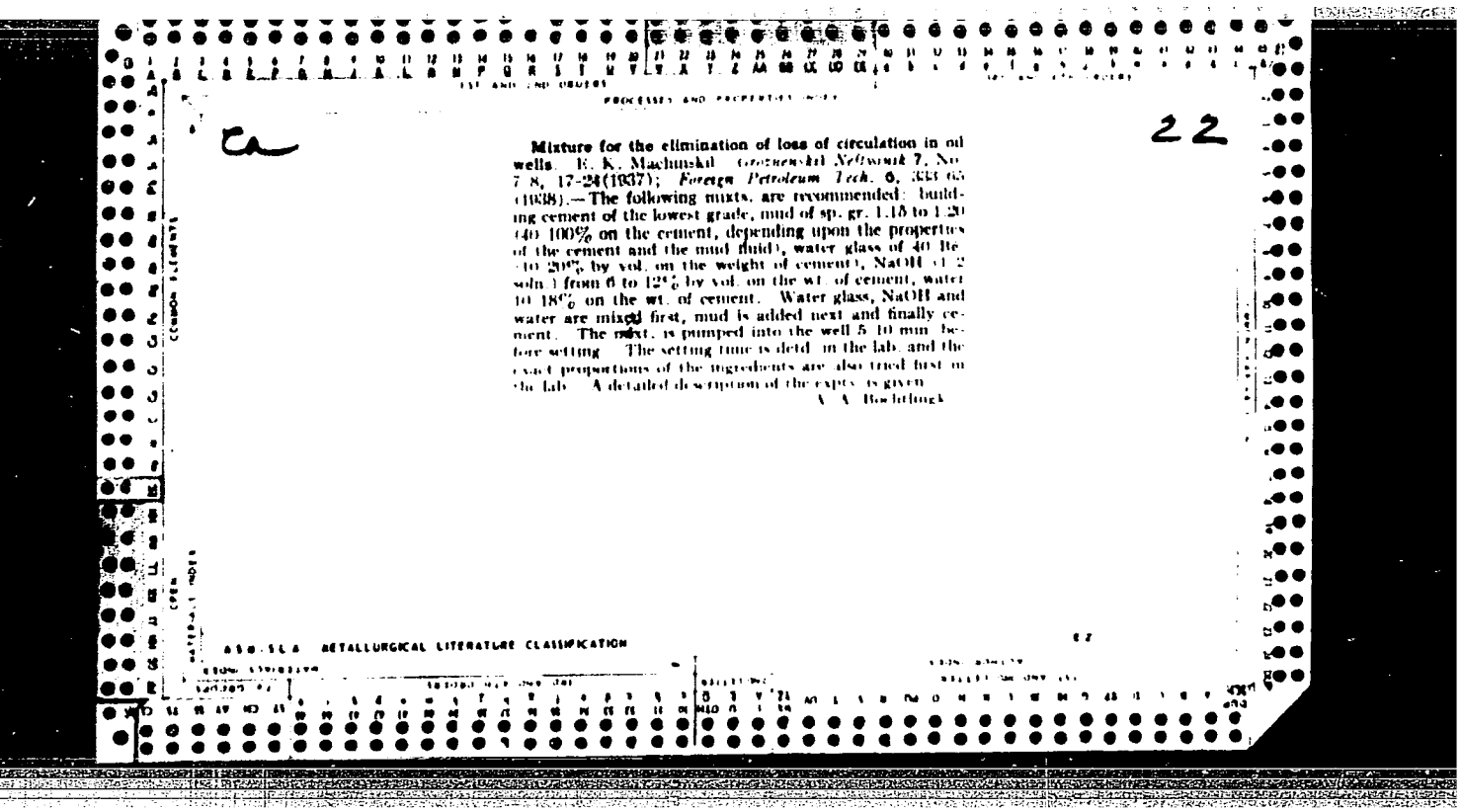
PROCESSES AND PROPERTIES INDEX

CA

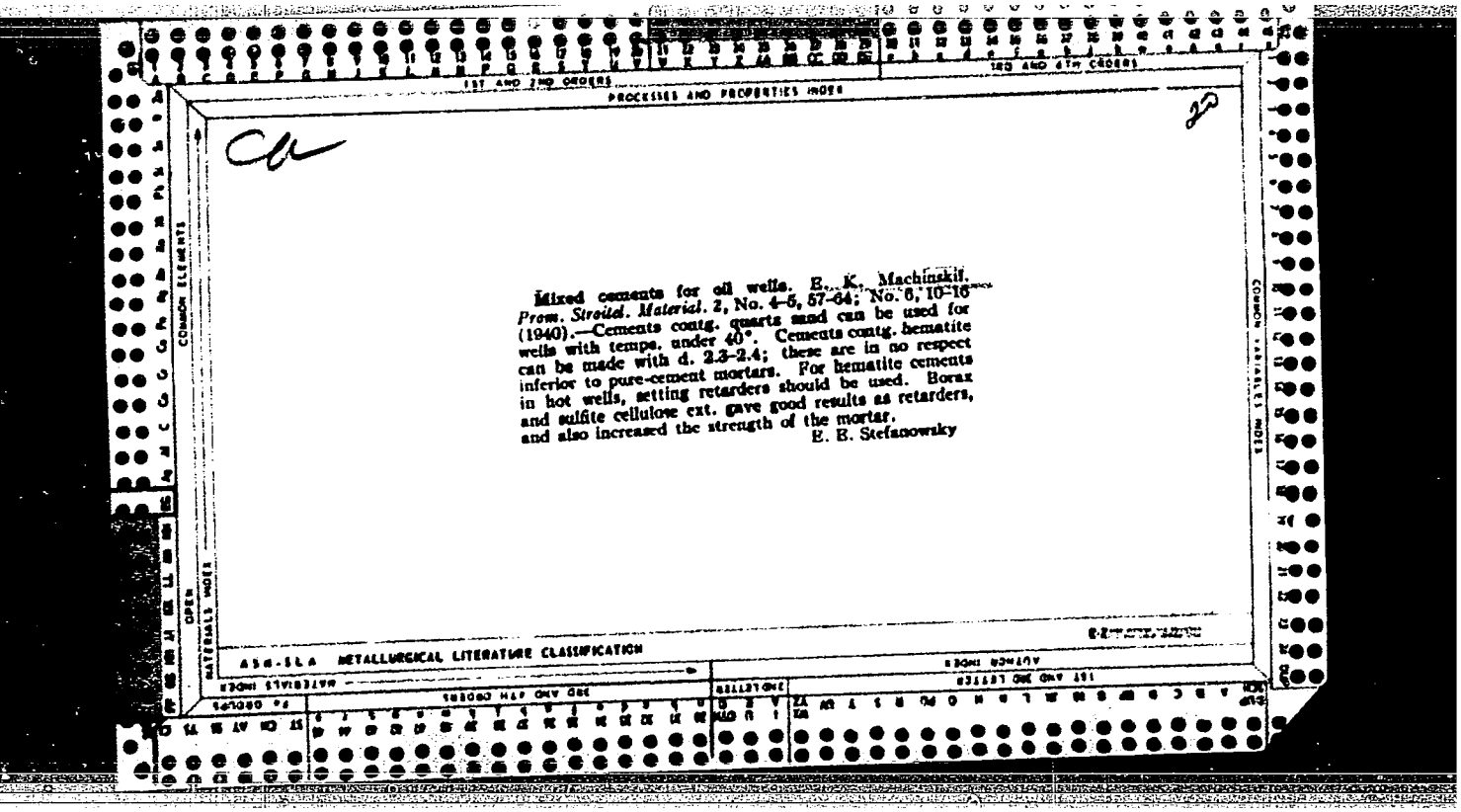
10

The effect of mineral oil on concrete. B. A. Machinskii. *Grozenskii Neftyanik* 7, No. 6, 51-5(1937).—In reinforced concrete subjected to a continuous satn. with oil the cohesion between the steel and the concrete is disrupted, and the mechanical strength is lowered with time. The expts. are described. A. A. Boehtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

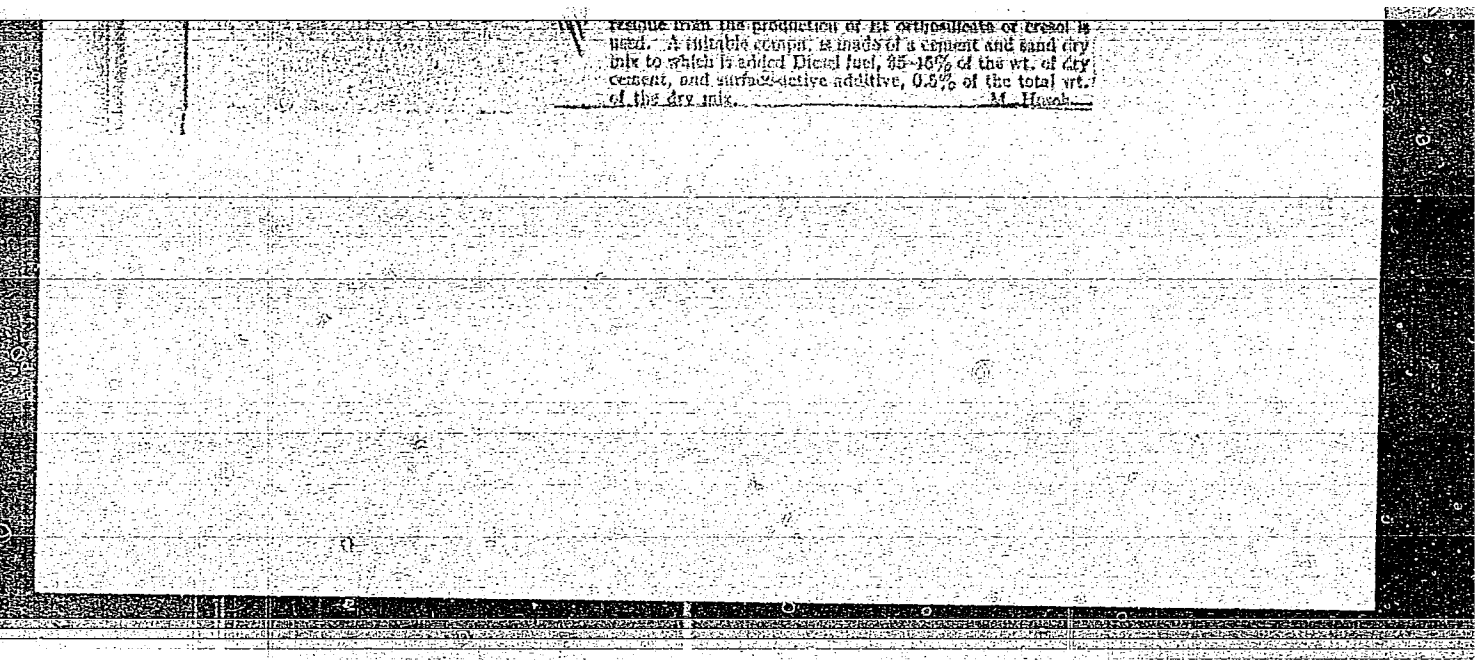


Mixture for the elimination of loss of circulation in oil wells. E. K. Machinskii. *Azerbaidzhanskii Neftyanik* **7**, No. 7-8, 17-24(1937); *Foreign Petroleum Tech.* **6**, 335-6 (1938).—The following mixts. are recommended: building cement of the lowest grade, mud of sp. gr. 1.15 to 1.20 (40-100% on the cement, depending upon the properties of the cement and the mud fluid), water glass of 40 Be (10-20% by vol. on the weight of cement), NaOH (1.2 soln.) from 6 to 12% by vol. on the wt. of cement, water 10-18% on the wt. of cement. Water glass, NaOH and water are mixed first, mud is added next and finally cement. The mixt. is pumped into the well 5-10 min. before setting. The setting time is detd. in the lab. and the exact proportions of the ingredients are also tried first in the lab. A detailed description of the expts. is given.
V. A. Bachtiloff



Mixed cements for oil wells. E. K. Machinskif. *Prom. Stroitel. Material.* 2, No. 4–5, 57–64; No. 6, 10–16 (1940).—Cements contg. quartz sand can be used for wells with temps. under 40°. Cements contg. hematite can be made with d. 2.3–2.4; these are in no respect inferior to pure-cement mortars. For hematite cements in hot wells, setting retarders should be used. Borax and sulfite cellulose ext. gave good results as retarders, and also increased the strength of the mortar.

E. B. Stefanowsky



requie than the production of ET orthosulfate or cresol is used. A suitable compn. is made of a cement and sand dry mix to which is added Diesel fuel, 85–15% of the wt. of dry cement, and surface-active additive, 0.5% of the total wt. of the dry mix. M. Hnoh

Sov/93-58-4-3/19

AUTHOR: Machinskiy, Ye.K.; Stafikopulo, A.N.; and Bulatov, A.I.

TITLE: Unburned Slag and Sand Cements for Plugging Wells Having Bottom Hole Temperatures up to 200°C (Shlako-peschanyye bezobzhigovyye tsementy dlya tamponazha skvazhin s zaboynymi temperaturami do 200°C)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 4, pp 15-20 (USSR)

ABSTRACT: The article presents laboratory data on unburned slag and sand cements for plugging oil wells with bottom hole temperatures up to 200°C. This type of cement was developed by the GrozNII laboratory on the basis of research carried out by G. Sivertsev [Ref. 11] and R.M. Lezhoyev of the Giprotsement Institute [Ref.7]. The laboratory experiments were carried out with pulverized slag similar in fractional composition to the cement produced by the Karadag plant. The flow test was carried out by the AzNII cone method, and the modulus of activity which is the relation $\frac{Al_2O_3}{SiO_2}$ was determined in accordance with the GOST 3476-52 specification. The setting time and hardness were determined by means of autoclaves of GrozNII design. Table I shows the setting time of the slag slurries in relation to the storage time of the pulverized slag. The tests have established that the blast furnace slag from the metallurgical plants im. Stalin and "Svobodnyy sokol" are most suitable for the production of plugging cements, and that the slag from the Frunze metallurgical

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plant is unsuitable. It was also determined that the setting time and strength of such cements can be controlled by additions of silica or silica-magnetic sands. At temperature ranging from 150 to 200°C and pressures from 500 to 700 atm. the setting time was from several minutes up to 24 hours, depending on the sand content. After 48 hours of hardening the strength of the cement began to vary. But cements containing standard additions of sand displayed greater strength than GOST 1581-42 specification plugging cement. The authors conclude that research in slag cement must continue in 1958, but that the available data make it possible to produce an experimental batch of slag cement for testing in deep wells. There are 11 Soviet references and 1 table.

1. Petroleum industry 2. Wells--Maintenance 3. Cement--Properties 4. Slags
Card 2/2 --Applications 5. Wells--Temperature factors

MACHINSKIY, Ye.K.; BULATOV, A.I.

Effect of temperature and hardening time on the specific weight of cement rock. Izv. vys. ucheb. zav.; neft' i gaz 2 no.7:115-116 '59. (MIRA 12:12)

1.Groznenskiy neftyanoy institut.
(Cement)

MACHINSKIY, Yevgeniy Konstantinovich; BULATOV, Anatoliy Ivanovich; FILIPENOK, T.G., red.; KUZ'MENKOVA, N.T., tekhn. red.

[Cement and cinder-sand slurries for plugging wells] TSementno- i shlako-peschanye rastvory dlia tamponazha skvazhin. Groznyi, Checheno-Ingushskoe knizhnoe izd-vo, 1960. 90 p. (MIRA 14:7)
(Oil well cementing)

MACHINSKIY, Ye.K.; BULATOV, A.I.

Cement-based fluids for plugging wells under complex conditions.
Gaz. prom. 5 no. 12:7-12 D '60. (MIRA 14:1)
(Gas wells) (Drilling fluids)

MACHINSKIY, Ye.K., BUIATOV, A.I.

Slag-sand cement slurry with unground quartz sand developed by the Groznyy Petroleum Research Institute. Neft. khoz. 38 no.3:62-64 Mr '60. (MIRA 13:7)
(Oil well cementing)

MACHINSKIY, Ye.K.; BULATOV, A.I.

Relative longevity of portland and cinder-sand ements in wells having high temperatures. Trudy GrozNII no.10:32-37 '61. (MIRA 15:2)

(Oil well cementing)

BULATOV, A.I.; MACHINSKIY, Ye.K.

Effect of aggressive waters on portland and cinder-sand plugging cements. Neft. khoz. 39 no.6:29-33 Je '61. (MIRA 14:8)
(Oil well cementing)

MACHINSKIY, Ye.K.; ZOBS, Yu.Yu.

Light cement grouting for deep and super-deep wells with bottom temperatures ranging from 90-200° C. Neft. khoz. 41 no.3:21-25 Mr '63. (MIRA 17:11)

S/250/63/007/003/006/006
A059/A126

AUTHORS: Martynyuk, M.M., Machionis, Z.A., Yerofeyev, B.V., Semenchenko, V.K.

TITLE: Compressibility of polystyrene and poly-α-methylstyrene and its dependence on the molecular weight

PERIODICAL: Doklady Akademii nauk BSSR, v. 7, no. 3, 1963, 170 - 173

TEXT: The temperature dependence of the compressibilities of polystyrenes of the molecular weights of 1,000, 4,100, 7,300, 23,900, 37,500, 141,000, and 613,900, and of the poly-α-methyl styrenes of the molecular weights of 606,800 and 54,800 was measured by way of reducing the pressure in the range from 400 to 200 kg/cm^2, as described by M.M. Martynyuk and V.K. Semenchenko (Kolloidnyy zhurnal, v. 25, no. 2, 1963). The monomers were subjected to anionic polymerization according to Schwarz, and their molecular weights measured in toluene with an Ubbelohde-type viscometer described by S.R. Rafikov (Vysokomolekulyarnyye soyedineniya, v. 1, 1,558, 1959), while those of the polymers up to 7,300 were determined cryoscopically in benzene. The polystyrene samples were pressed and slowly cooled at 400 kg/cm^2 and 180 to 220°C in dependence on the molecular

Card 1/3

Compressibility of polystyrene and ....

weight, and at 260°C for poly-α-methyl polystyrene. Thermal destruction of the polymers was 18% on the average, the structures being completely amorphous according to x-ray data. The three highest-molecular polystyrenes and the poly-α-methyl styrenes showed practically uniform compressibilities. Three temperature regions were established on the compressibility curves, namely a) that of low compressibility independent of temperature; b) the intermediate one with a fast increase of compressibility with temperature; and c) that of high compressibility showing a linear increase with temperature. The compressibilities of polystyrenes with molecular weights in excess of 30,000 can be given for temperatures above 110°C by the equation:

$$-10^6 \left(\frac{\partial v}{\partial p}\right)_T = (t - 110)\, 0.233 + 49 ,$$

where t is given in °C, and

$$-\left(\frac{\partial v}{\partial p}\right)_T = \frac{1}{m}\left(\frac{\partial V}{\partial p}\right)_T \ \text{cm}^3/\text{g-atm} ,$$

with v being the specific volume and V the volume. The corresponding equation for poly-α-methyl styrene with M in excess of 55,000 and temperatures above

Compressibility of polystyrene and ....

180°C is

$$-10^6\left(\frac{\partial v}{\partial p}\right)_T = (t - 180)\,0.2 + 52.$$

Three characteristic points are found on the compressibility curve of the amorphous polymers, i.e., a) the end point t_1 of the first region after which the compressibility increases; b) the initial point t_2 of the third region after which a linear dependence of the compressibility is established; and c) the inflexion point t_i, where the compressibility is half the sum of the compressibilities at the points t_1 and t_2. t_i for polystyrenes of molecular weights in excess of 35,000 is practically independent at about 101°C, while, for lower-molecular polymers, the equation $t_i = 6.6 \ln M + 32$ holds. The polydispersity of the sample was experimentally shown to have no marked effect on the compressibility curve of high-molecular polymers. L.M. Kantorovich and F.M. Rapoport are mentioned. There are 2 figures and 1 table.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im. V.I. Lenina (Belorussian State University im. V.I. Lenin); Moskovskiy pedagogicheskiy institut im. N.K. Krupskoy (Moscow Pedagogic Institute im. N.K. Krupskaya)

SUBMITTED: December 25, 1962

Card 3/3

L 63557-65 EPF(c)/EWP(j)/EWT(1)/EWT(m)/T Pc-4/Pi-4/Pr-4 IJP(c) RM

ACCESSION NR: AT5009431 UR/3139/64/000/005/0083/0088

AUTHOR: Macionis, Z. (Machionis, Z.); Jerofejevas, B. (Yerofeyev, B.)

TITLE: Fluorescence of polymeric compounds prepared by the method of anionic polymerization

SOURCE: Nauchnyye trudy vysshikh uchebnykh zavedeniy Litovskoy SSR: Khimiya i khimicheskaya tekhnologiya, no. 5, 1964, 83-88

TOPIC TAGS: polymer fluorescence, anionic polymerization, scintillation counter, cyclohexadiene polymer, cyclic polyolefin

ABSTRACT: After reviewing the previous work with "live" polymers and the bright fluorescence of the polymeric substances used in scintillation counters, the authors describe their experiments with polycyclohexadiene-1,3 produced by anionic polymerization. They discovered that adding cyclohexadiene-1,3 to a green solution of sodium naphthalene changed its color to a bright red immediately at room temperature (and in the course of 1.5 - 2 hours during polymerization at -75C). The red color faded upon contact with air, water, or CH_3OH, but became bright red again upon adding a second dose of the cyclohexadiene, and the molecular weight of the polymer increased slightly. This proves that cyclohexadiene-1,3 and many other monomers can form "live" polymers. When the polymerization time was

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ACCESSION NR: AT5009431

prolonged from 6 to 16 hours and the temperature reduced to -75C, anionic polycyclohexadiene was produced with a molecular weight of 790-1820. No higher molecular weight compounds could be obtained. The process of thermal polymerization in ampules soldered in a vacuum or in nitrogen is also described. Fluorescence spectra of these polymers were taken by means of an SVDShA-250 mercury vapor lamp and an ISP-51 spectrograph. The spectra of a number of monomers and polymers are described in some detail and their maximum fluorescence at various wave lengths is recorded. The authors conclude that the fluorescence of polystyrene, poly-α-methylstyrene and polycyclohexadiene-1,3 produced by anionic polymerization, and thus containing no monomers, at 400-610 mμ is characteristic of all the polymers studied. Drying anionic polymers displaces the maximum fluorescence toward longer wave lengths, which may be related to the formation of new fluorescence centers due to oxidation of the polymer, and to isomerization of unstable fluorescence centers into stable elements in the polymer structure; this would also explain the fluorescent "scintillation" observed under ultraviolet light.

ASSOCIATION: Kafedra khimicheskoy tekhnologii, Vil'nyusskiy Gosuniversitet im. Kapsukasa (Department of Chemical Technology, Vilnius State University); Kafedra kataliza, Belorusskiy Gosuniversitet im. Lenina (Catalysis Department, Belorussian State University)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001031310014-7"

MACHIONIS, Z.A. [Macionis, Z]; YEROFEYEV, B.V.

Ratio of Haggins constants for monodisperse and heterodisperse solutions of polystyrene and poly-α-methylstyrene. Dokl. AN BSSR 8 no.4:237-240 Ap '64. (MIRA 17:6)

1. Vil'nyusskiy gosudarstvennyy universitet imeni V. Kapsukasa i Belorusskiy gosudarstvennyy universitet imeni Lenina.

MACHIONIS, Z.A.; YEROFEYEV, B.V.

Viscosity of solutions of two-component mixtures of polymer homologs (as exemplified by polystyrene and poly-α-methylstyrene homologs. Dokl. AN BSSR 8 no.10:657-660 O '64.

(MIRA 18:3)

1. Vil'nyusskiy gosudarstvennyy universitet im. V.Kapsukasa i Belorusskiy gosudarstvennyy universitet im. V.I.Lenina.

MACHIS, E. V.

MACHIS, E. V.: "The effect of a variable angle of ignition advance on the dynamic and economic indexes of operation of the 1-MA tractor engine". Kaunas, 1955. Min Higher Education USSR. Lithuanian Agricultural Academy. (Dissertations for the Degree of Candidate of Technical Sciences.)

So: Knizhnaya letopis' no. 49, 3 December 1955. Moscow.

MACHIS, Yu. V. Cand Agr Sci -- (diss) "Selecting ~~the grades~~ of Cauliflower (Varieties under the) ~~in~~ Field Conditions of the Lithuanian SSR." Kaunas, 1957. 16 pp 23 cm. (Min of Agriculture USSR, Lithuanian Agricultural Academy), 150 copies (KL, 18-57, 97)

MACHITIDZE, A. V.

USSR/Miscellaneous - Industrial processes

Card 1/1 Pub. 103 - 9/22

Authors : Yevstegneyev, Yu. A., and Machitidze, A. V.

Title : High-speed gear grinding

Periodical : Stan. i instr. 12. 22-23, Dec 1954

Abstract : The advantages and disadvantages of high-speed gear grinding are discussed. The basic limiting factor in high-speed gear grinding was found to be the appearance of scabs on the ground surface of the tooth which increases with the increase in peripheral velocity of the wheel. The effect of changing the speed of the grinding wheel on the surface purity and the effect of changing the speed of contact shift on the final grinding results, are analyzed. Graphs; drawing.

Institution : .....

Submitted : .....

MACHITIDZE, A.V.; YEVSTEGNEYEV, Yu.A.

Using the P038 instrument for checking the precision of gear-grinding machines. Stan. i instr. 28 no.10:27-29 O '57. (MLRA 10:11)
(Gear cutting machines) (Measuring instruments)

S/121/60/000/012/005/015
A004/A001

AUTHOR: Machitidze, A. V.

TITLE: The Effects of Dimensional Durability of Grinding Wheels on the Accuracy of Gears Being Ground

PERIODICAL: Stanki i Instrument, 1960, No. 12, pp. 12-14

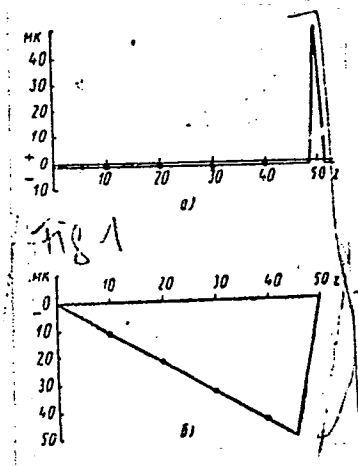
TEXT: The author describes the results of investigations carried out at the ENIMS to determine the errors during the gear grinding process which result from the wear of the grinding wheel. In the first approximation the wear magnitude of the grinding wheel can be assumed to be proportional to the grinding length: $S = \beta L$, where β = the crumbling factor of the grinding wheel, taking into consideration its diameter, hardness, grain size, material to be ground and grinding conditions; $L = lz$ - total grinding length in mm (l - length of tooth being ground, z - number of teeth). Thus the errors become considerable during the grinding of gears with a great number of teeth and of considerable width. Factor β increases with a decrease in diameter of the grinding wheel and its hardness and with an increased grinding depth and feed. Investigating the effects of the grinding wheel wear during operations on machine tools with noncontinuous indexing

Card 1/5

S/121/60/000/012/005/015
A004/A001

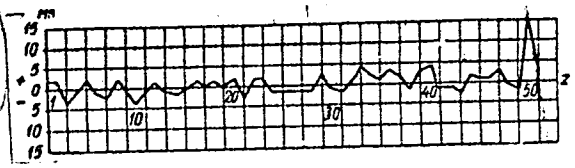
The Effects of Dimensional Durability of Grinding Wheels on the Accuracy of Gears Being Ground

Figure 1:



through one tooth, it was found that the character of the effect of wear of the grinding wheel on the accuracy of the circular pitches was equal both for the grinding with profile wheels on the 5861, 5860A and 586 machine tools and with disk wheels on the 5831 machines, although the shape and magnitude of wear are different for each type of machine tool. Figure 1 shows a) the difference of adjacent circular pitches, b) the accumulated errors of circular pitches caused by the wear of the grinding wheel, indexing being effected through each tooth, the gear having the parameters m = 4, z = 50. Figure 2 shows a graph of the adjacent circular pitches of a gear (m = 4, z =50)

Figure 2:



Card 2/5

The Effects of Dimensional Durability of Grinding Wheels on the Accuracy of Gears Being Ground

ground on the RS-3 grinding machine of Messrs. Niles. Machining took place in four operations, two rough operations with radial infeed of 0.12 and 0.10 mm respectively, one semi-finish and one finish operations with radial infeeds of 0.03 and 0.01 mm respectively. The great deviation between the 1st and 50th tooth is caused by the grinding wheel wear.

Figure 3:

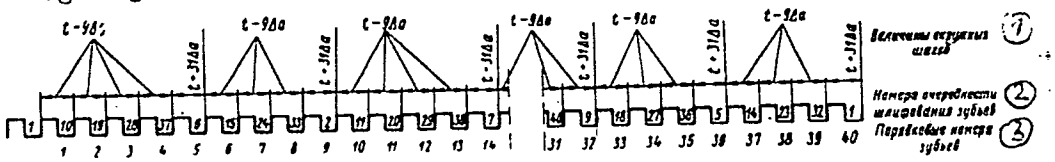


Figure 3 shows the deviation scheme of the circular pitches for indexing through 9 teeth, (1) = circular pitch magnitudes, (2) sequence numbers of tooth grinding, (3) index number of teeth. It is assumed that after the grinding of each tooth, the wheel is worn according to magnitude Δa. It can be seen from the figure that the theoretical pitch magnitude of the gear changes, because the teeth, located

The Effects of Dimensional Durability of Grinding Wheels on the Accuracy of Gears Being Ground

side by side, are ground in a different way by the worn grinding wheel. The errors caused by the worn grinding wheel exceed the permissible machine-tool error by 2-3 times. The investigation results show that on gear grinding machines operating with disk-shaped grinding wheels, the wear of the grinding wheel affects to a greater extent the distortion of the circular pitch than the deformation of the tooth profile. To increase the accuracy and efficiency of gear grinding machines it is necessary to use special devices automatically compensating for the grinding wheel wear or devices ensuring the preservation of the initial position of the cutting edge of the tool relative to the tooth space. Moreover, it was found that on gear grinding machines operating with abrasive worms the wear of the wheel affects the accuracy of the gear being ground to a lesser degree than it is the case with grinding machines using disk-shaped grinding wheels. When grinding wide gears with abrasive worms, the wear of the grinding wheel affects in the main the rectilinearity of the teeth, since owing to the gradual wear of the grinding worm the teeth are becoming conical. It is, therefore, expedient to provide grinding machines for the grinding of big-sized gears with devices compensating for the

S/121/60/000/012/005/015
A004/A001

The Effects of Dimensional Durability of Grinding Wheels on the Accuracy of Gears Being Ground

wheel wear, e. g. by way of continuous displacements of the abrasive worm along its axis during the working process. To reduce the negative effects of the grinding wheel wear on the gear accuracy it is recommended to increase the number of machining cycles and use harder grinding wheels. There are 9 figures.

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MACHITIDZE, A.V.

Effect of the cyclic error of a gear-grinding machine on the accuracy of gear wheel tooth profile. Stan.i instr. 32 no.10: 7-10 O '61. (MIRA 14:9)

(Gear cutting)

MACHITIDZE, A.V.

Straightening an abrasive worm wheel with diamond cutters. Stan.i instr. 33 no.9:25-28 S '62. (MIRA 15:9)
(Grinding wheels)

MACHITIDZE, A.V.

Effect of the cyclic error of a gear-grinding machine on the precision of gear-wheel pitch. Stan.i instr. 33 no.12:16-18 D '62. (MIRA 16:1)

(Gear-cutting machines)

MACHKA, J.

Some remarks on a flax pulling-threshing machine.

p. 443. (Mechanisace Zemedlstvi. Vol. 7, No. 19, Oct. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 2,
February 1958

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TITLE: Semiconductor source of visible radiation

SOURCE: AN GruzSSR. Soobshcheniya, v. 41, no. 1, 1966, 45-48

TOPIC TAGS: light source, gallium compound, phosphide, pn junction, photoelectric property, semiconductor diode, semiconductor carrier, forbidden band, volt ampere characteristic

ABSTRACT: The authors describe a diode emitting visible light, based on gallium phosphide with diffusion n-p junction, and describe some of its photoelectric characteristics. The light radiated by the diode is produced by recombination of nonequilibrium carriers through the impurity levels in the forbidden band, or by band-band recombination (Fig. 1). The volt-ampere characteristics taken at room temperature and at liquid-nitrogen temperature exhibit a sharp breakdown in both the forward and inverse directions. The spectrum at liquid-nitrogen temperature has three peaks at 7100, 6140, and 5650 Å, which successively decrease in amplitude with decreasing wavelength. There is no adequate explanation for the structure of the spectrum. According to preliminary data, the time constant of the radiation is 2×10^{-7} sec. The

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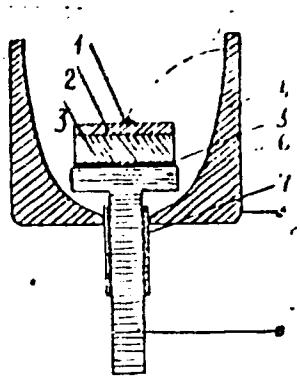
Fig. 1. Construction of gallium-phosphide light source. 1 - Point contact, 2 - p region, 3 - n region, 4 - metal housing with reflecting internal surface, 5 - solid contact, 6 - copper cooling holder, 7 - insulation.



authors thank Professor N. A. Goryunova and A. S. Borshchevskiy for supplying the gallium-phosphide crystals. This report was presented by Academician V. I. Mamasakhlisov 25 February 1965. Orig. art. has: 4 figures.

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MACHKASHI, A. (Budapesht)

Radiant heating by perimetrical zones of the ceiling. Vod.i san.tekh. no.8:34-38 Ag '59. (MIRA 12:11)
(Radiant heating)

MACHKASHI, A. (Budapesht)

Power indices of air conditioners. Vod. i san. tekh. no.7:30-35 Jl '61. (MIRA 14:7)

(Air conditioning)

MACHKASHI, A., prof.

Basic principles of the radiant heating of large rooms. Vod. i san. tekh. no.2:35-40 F '64 (MIRA 18:2)